



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D.C. 20460**

**OFFICE OF THE ADMINISTRATOR  
SCIENCE ADVISORY BOARD**

February 26, 2020

EPA-SAB-20-001

The Honorable Andrew R. Wheeler  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460

Subject: SAB Recommendations for EPA's FY 2019 Scientific and Technological  
Achievement Awards

Dear Administrator Wheeler:

The EPA Science Advisory Board (SAB) is pleased to transmit its recommendations for the EPA's FY 2019 Scientific and Technological Achievement Awards (STAA). The STAA program was established by the Agency in 1980 to recognize EPA employees who have made outstanding contributions to the advancement of science and technology through their publications in peer-reviewed journals or books, or as peer-reviewed EPA reports. Additional objectives of the STAA program include making the general public more aware of the quality and depth of EPA science, and improving the credibility of the science underpinning Agency decisions. The SAB has been asked by EPA's Office of Research and Development to review EPA's nominated scientific publications and make recommendations for awards. The SAB is pleased to continue to serve in this important role in the STAA program.

The SAB STAA Committee's review consisted of a two-step process: an initial review of each nomination for award, followed by a Committee discussion of all nominations. Each nomination included a maximum of three publications for consideration of STAA recognition. This year, the SAB reviewed a total of 53 nominations comprised of 98 publications within 14 science and technology categories.

The SAB commends the Agency for its publications and finds that the 2018-2019 STAA nominations were of high quality. The SAB assures the EPA that its scientists are conducting high quality work and producing excellent scientific publications that have significant public and environmental health benefits. The SAB recommends: one nomination for Level I, the highest award; three nominations for Level II; 16 nominations for Level III; and 24 nominations for Honorable Mention. The SAB's recommendations are provided in the enclosed report.

The SAB appreciates the efforts that the Agency has made to implement SAB's previous recommendations for improving the nomination procedures and administration of the STAA program. While many of the SAB's previous recommendations have been or are being incorporated into improving the STAA nomination process and program, the SAB expresses concern that several previous SAB recommendations have not apparently been incorporated. The SAB reiterates several of these recommendations in this report, and also includes several additional recommendations to further strengthen and improve the STAA program. In particular, we recommend that the EPA:

- Provide more-detailed guidance to nominees and nominating officials on the STAA nomination procedures, guidelines and evaluation criteria. The procedures and guidelines should emphasize the potential value of delaying submission of nominations to better demonstrate the impact of the work.
- Continue to improve the automated system for generating nominations and processing awards, assuring that each nomination is complete and meets all nomination eligibility requirements.
- Continue to improve the content and organization of the nomination packages.
- Assess the trend of decreasing STAA nominations, including identifying potential causes for the decrease in STAA nominations and determining whether barriers that restrict submissions can be addressed.

The SAB commends the Agency for again successfully administering its annual STAA program and applauds the EPA's public recognition of the scientific work of EPA scientists and engineers that is published in the peer-reviewed literature. Thank you for providing the SAB with the opportunity to assist the Agency with this important program. The SAB looks forward to reviewing the FY 2020 STAA nominations.

Sincerely,

/s/

Dr. Michael Honeycutt  
Chair  
Science Advisory Board

/s/

Dr. Jay R. Turner  
Chair  
SAB 2019 Scientific and Technological  
Achievement Awards Committee

Enclosure

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## TABLE OF CONTENTS

<b>1. BACKGROUND .....</b>	<b>1</b>
<b>2. SAB REVIEW PROCEDURE .....</b>	<b>3</b>
<b>3. AWARD RECOMMENDATIONS .....</b>	<b>5</b>
<b>4. ADMINISTRATIVE RECOMMENDATIONS.....</b>	<b>7</b>
<b>REFERENCES.....</b>	<b>11</b>
<b>APPENDIX A: NOMINATIONS RECOMMENDED FOR 2019 STAA AWARDS .....</b>	<b>A-1</b>

# 1. BACKGROUND

EPA's Scientific and Technological Achievement Awards (STAA) program was established in 1980 to recognize the Agency's scientists and engineers who publish their technical work in peer-reviewed literature. The STAA program is administered and managed by the EPA Office of Research and Development (ORD). This year, the EPA Science Advisory Board (SAB) was asked to review the EPA's nominated scientific publications and make recommendations for STAA awards in consideration of the EPA's criteria. The EPA announced the call for nominations for the 2019 STAA program to senior managers and employees on March 5, 2019. For this cycle, the EPA has combined the 2018-2019 STAA awards, and opened the nominations on April 1, 2019 for 30 days. The nomination period for electronic nominations was closed on May 1, 2019. The eligibility criteria covered six years with the combination of 2018-2019 awards. ORD screened the nominations for conformance with EPA's *2018-2019 STAA Nomination Procedures and Guidelines*. The Guidelines describe the award levels, eligibility criteria, and factors that the SAB considers during its review of STAA nominations.

The Agency's charge to the SAB was to consider which of the nominations for the 2018-2019 STAA program are deserving of STAA recognition. The SAB considered the following criteria as defined by the Agency for STAA recognition:

- Level I awards are for nominees who have accomplished an exceptionally high-quality research or technological effort that is highly relevant to EPA's mission, and has demonstrated a direct influence on EPA's mission and policies. The awards recognize the creation or general revision of a scientific or technological principle or procedure, or a highly significant improvement in the value of a device, activity, program, or service to the public. The award recognizes research resulting from substantial originality, creativeness, initiative, and problem-solving ability of the researchers, as well as substantial level of effort required to produce the results. Awarded research is of national significance or has high impact on a broad area of science/technology. In addition, the awarded research has timely consequences and is recognizable as a major scientific/technological achievement within its discipline or field of study.
- Level II awards are for nominees who have accomplished a notably excellent research or technological effort that has qualities and values similar to, but to a lesser degree, than those described under Level I. Awarded research has timely consequences and contributes as an important scientific/technological achievement within its discipline or field of study.
- Level III awards are for nominees who have accomplished an unusually notable research or technological effort. The awards are for a substantial revision or modification of a scientific/technological principle or procedure, or an important improvement to the value of a device, activity, program, or service to the public. Awarded research relates to a mission or organizational component of the EPA, or significantly affects a relevant area of science/technology.
- Honorable Mention awards acknowledge research efforts that are noteworthy but do not warrant a Level I, II or III award. Honorable Mention applies to research that: (1) may not quite reach the level described for a Level III award; (2) show a promising area of research that should be encouraged; or (3) show an area of research that is too preliminary to warrant an award recommendation at this time.

As described in the Agency's *Nomination Procedures and Guidelines*, the SAB reviewed the nomination packages in consideration of the above criteria and the following factors:

1. The extent to which the work reported in the nominated publication(s) resulted in either new or significantly revised knowledge. The accomplishment is expected to represent an important advancement of scientific knowledge or technology relevant to environmental issues and EPA's mission.
2. The degree to which the accomplishment is a product of the originality, creativeness, initiative, and problem-solving ability of the researchers, as well as the level of effort required to produce the results.
3. The extent to which environmental protection has been strengthened or improved, whether of local, national, or international importance.
4. The extent of the beneficial impact of the accomplishment and the degree to which the accomplishment has been favorably recognized from outside EPA.
5. The nature and extent of peer review, including stature and quality of the peer-reviewed journal or the publisher of a book for a review chapter published therein.

## 2. SAB REVIEW PROCEDURE

In May 2019, the SAB Staff Office formed the SAB 2019-2021 STAA Committee to review EPA's STAA nominations. The Committee was formed by the SAB Staff Office Director in accordance with the SAB process as described in the SAB 2002 publication, *Panel Formation Process: Immediate Steps to Improve Policies and Procedures* (U.S. EPA Science Advisory Board, 2002).

ORD submitted to the SAB Staff Office 53 nominations for 2019 STAA recognition within 10 Primary science and technology categories. Table 1 shows the number of EPA nominations in each category. The nominated publications, along with the evaluation criteria were provided to the SAB STAA Committee in advance of the Committee's review meeting.

**Table 1. 2019 STAA Nominations by Category**

<b>Category</b>	<b>Number of Nominations Submitted to SAB</b>
Control Systems & Technology	3
Ecological Research	4
Health Effects Research and Human Health Risk Assessment	9
Monitoring and Measurement Methods	5
Transport & Fate	11
Review Articles	1
Environmental Policy and Decision-Making Studies	4
Energy and the Environment	2
Sustainability and Innovation	9
Other Environmental Research	5
<b>TOTAL</b>	<b>53</b>

The SAB STAA Committee review consisted of a two-step process: 1) an initial review of each nomination, followed by 2) a Committee discussion of all nominations. After receiving feedback from members of the STAA Committee on their review preferences, the Chair of the SAB STAA Committee assigned nominations to each Committee member for review. Each nomination was initially reviewed by two Committee members. One Committee member was sick and could not attend the face-to-face meeting. Three additional Committee members with subject matter expertise also reviewed three nominations reviewed by this member. Committee members assigned for initial review of each nomination provided their preliminary recommendation for STAA recognition and a written summary of their preliminary assessment, following the EPA's award criteria described in Section 1. This information was distributed to Committee members a few days before the July 16-17, 2019 Committee meeting.

During the SAB STAA Committee's closed meeting on July 16-17, 2019, in Washington, DC, the Committee discussed award recommendations for the EPA's 2019 STAA program. The Committee's deliberations were closed to the public because such discussions involved personnel matters, including the relative merits of the scientific contributions of EPA's STAA nominees. Such disclosure would be a clear unwarranted invasion of personal privacy and is, therefore, protected from disclosure by sections (c)(2) and (c)(6) of the Government in the Sunshine Act, specifically 5 U.S.C. 552b(c)(2) and 5 U.S.C. 552b(c)(6).

At the July 16-17, 2019 Committee meeting, each nomination was discussed separately by Committee members using the following process: each Committee member assigned as an initial reviewer presented a summary of his or her preliminary evaluation; the Committee at large then discussed the nomination; and the Committee reached a consensus position on the recommended award rating. If there were widely divergent recommendations for awards at this stage in the discussion, the chair implemented one of two options: 1) requesting further discussion of that nomination later in the meeting, or 2) conducting a vote of the Committee on final recommendations for award. The Committee's total discussion time for each nomination averaged approximately twelve minutes, during which they reached consensus on the recommendations for awards. To avoid an appearance of bias or a loss of impartiality, some members were asked to recuse themselves from the Committee deliberations on five nominations. The Committee also discussed recommendations to further strengthen the STAA program and facilitate the SAB review of future STAA nominations.

The chartered SAB reviewed the report of the 2019 SAB STAA Committee and it was approved for transmittal to the EPA Administrator.

### 3. AWARD RECOMMENDATIONS

Table 2 summarizes previous recommendations for STAA awards by year for the last 11 years, including the current recommendations for 2019. For 2019, the SAB STAA Committee recommended: 1 nomination for Level I, the highest award; 3 nominations for Level II; 16 nominations for Level III; and 24 nominations for Honorable Mention. Appendix A lists the EPA nominations recommended for each of the award levels, I through III, and those recommended for Honorable Mention. The final rankings were agreed to by consensus at the SAB STAA Committee meeting on July 16-17, 2019, and approved by the chartered SAB.

**Table 2. Comparison of Award Recommendations Over Time**

<b>Award Level</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2019</b>
<b>Nominations Reviewed</b>	140	130	109	121	130	104	117	72	116	75	58	53
<b>Level I</b>	5 (4%)	5 (4%)	3 (3%)	5 (4%)	3 (2%)	4 (4%)	0	1 (1%)	1 (1%)	0	3 <sup>a</sup> (5%)	1 (2%)
<b>Level II</b>	13 (9%)	16 (12%)	22 (20%)	14 (12%)	13 (10%)	10 (10%)	10 (9%)	2 (3%)	3 (3%)	8 (11%)	4 (7%)	3 (6%)
<b>Level III</b>	37 (26%)	30 (21%)	31 (28%)	42 (35%)	35 (27%)	29 (28%)	27 (23%)	20 (28%)	38 (33%)	13 (17%)	18 (32%)	16 <sup>a</sup> (31%)
<b>Honorable Mention</b>	45 (32%)	43 (33%)	25 (23%)	33 (27%)	44 (34%)	36 (35%)	45 (38%)	29 (40%)	42 (36%)	32 (43%)	18 (32%)	24 (46%)
<b>Not Recommended</b>	40 (29%)	36 (28%)	28 (26%)	27 (22%)	35 (27%)	25 (24%)	35 (30%)	20 (28%)	32 (27%)	22 (29%)	14 (24%)	8 (15%)

<sup>a</sup> The SAB combined two nominations into one because they covered related research.

Table 3 summarizes the distribution of 2019 award recommendations by category for all nominations reviewed by the Committee.

**Table 3. Summary of Award Recommendations by Category for FY2019**

Nomination Categories	Total Nominations Reviewed <sup>a</sup>	Award Levels				Honorable Mention
		I	II	III	Total	
Control Systems & Technology	3			1	1	1
Ecological Research	4		1	1	2	2
Health Effects Research and Human Health Risk Assessment	9	1		3 <sup>a</sup>	4	4
Energy and the Environment	2			1	1	1
Environmental Policy and Decision-Making Studies	4			1	1	3
Monitoring and Measurement Methods	5			1	1	1
Other Environmental Research	5			3	3	2
Review Articles	1					
Sustainability and Innovation	9		1	3	4	3
Transport and Fate	11		1	2	3	7
<b>TOTALS:</b>	<b>53</b>	<b>1</b>	<b>3</b>	<b>16</b>	<b>20</b>	<b>24</b>

<sup>a</sup>The SAB combined two nominations into one because they covered related research.

## 4. ADMINISTRATIVE RECOMMENDATIONS

The SAB appreciates the Agency's efforts to implement recommendations to the Administrator that have resulted from previous SAB reviews of STAA nominations. The SAB concludes that the substantial majority of the 2019 nominations adhered to existing STAA program guidelines, and that these guidelines helped the STAA Committee to conduct a well-informed and balanced review of each nomination.

The SAB has the following recommendations to further strengthen the STAA program in future years:

### ***I. Better Inform Nominees and Nominating Officials about the STAA nomination procedures and guidelines:***

- Emphasize the potential value in waiting to submit nomination to show impact: The 2018-2019 STAA nomination procedures and guidelines note that publications are eligible for a five year period based on publication date (although for this year, eligibility is for six years because there was no awards program in 2017-2018). The procedures and guidelines also note that *"It may be to your benefit to wait a few years after publication before submitting your nomination, allowing the importance and the impact on Agency's ability to better accomplish its mission to be more fully realized."* The SAB supports this recommendation and believes it should be reinforced with award applicants and managers that impact is a key criterion and in many cases a nomination would be strengthened by not submitting too soon after publication, thereby allowing more time for the impact to be demonstrated through agency actions, citations, etc.
- Each nomination should include information regarding previous STAA recognition received by authors, and the impact of previously submitted related nominations: The SAB previously recommended that the STAA nomination procedures and guidelines require nominees to submit information on whether any of their previous nominations received STAA recognition. In addition, because many current STAA nominations build on work submitted for STAA recognition in years past, SAB recommends that the STAA nomination procedures and guidelines require nominees to describe how their previously nominated publications in related topic areas may have provided a foundation for their current nomination.
- The SAB evaluates nominated work based on its contribution beyond previously nominated work on the same research topic. A nomination package cannot include publications that were included in a previously nominated package. However, previously nominated work is considered as a foundation, and the review of a current nomination is focused on the progress above that foundation. This means that in some cases, significant overall contributions by a long-term research effort have been rendered incremental from the award perspective because the committee has already reviewed (and often awarded) various milestones along the research pathway. Currently, there is no mechanism for the SAB to recognize the cumulative impact of long-term programs that cut across serial nominations, and recommends the Agency consider a separate award program to recognize the achievements of such long-term endeavors.
- Nomination of Review Articles: There is a nomination category for review articles. Review articles should be based on critical synthesis and evaluation of the literature and an assessment on future perspectives to be favorably evaluated by the STAA committee.



- Providing feedback to nominees and managers: During this review and in previous years, the STAA committee discussed whether nomination-specific feedback should be provided to the nominees. The STAA committee affirms this would not be appropriate but would like aggregated feedback to be provided to inform future submissions. Such feedback includes, but is not limited to: (i) the aforementioned approach to recommending awards when the overall research effort is extraordinary, the current nomination is an incremental contribution on top of previous contributions that have been reviewed, and often recommended for award, by the STAA; and (ii) some nominations demonstrate sound science but do not rise to the level of an Honorable Mention because the contribution to EPA's mission was not clear and/or the work was considered incremental, routine, or not innovative. Nominees should clearly state how their work contributes to EPA's mission and how the work advances the field. The STAA committee chair should have the opportunity to give a briefing to ORD on behalf of the committee on what the committee is looking for in a nomination, including a summary of common strengths and weaknesses. Subsequently, ORD could determine whether and how to disseminate this information to current and future nominees.

## ***II. Recommendations to improve the content and form of the nomination packages:***

- Prepare a master index of prior STAA nominations: STAA nomination procedures and guidelines prohibit resubmission of publications nominated for STAA recognition in prior years. In the 2017 STAA report, SAB requested that the Agency submit a master list that includes all nominations from the previous five years for each current-year author. This will assist the SAB STAA Committee members in their review by providing information regarding the author's nominated research in terms of its innovativeness and novelty, whether it represents a continuation of previous research by the nominee, and to help verify that publications nominated in prior years are not being resubmitted. The master index should be sorted alphabetically by author, indicate any author who has been nominated more than once during the previous five years (and in such cases, note the titles of that author's previously nominated publications), and note whether any author was nominated more than once for the current year's STAA. This advice was not incorporated. The SAB continues to uphold this recommendation.
- Front page of nomination should list titles of publications, and authors: For clarity purpose, the titles of nominated publications and authors should be listed on the front page of the nomination form/application.

## ***III. Completeness and Clarity of Nomination Package:***

- Continue to improve the automated system for generating nominations and processing award: The Agency has incorporated an automated nomination and award processing system to improve the STAA nomination and award generation process. This system has generated more consistent, better organized nomination packages. However, three packages were incomplete as nominated publications were missing. The SAB recommends that the Agency or contractor staff perform the functions noted below:
  - a) *Provide principal authors a copy of the final draft nomination package for quality review.* To further assure that nominations are complete and accurate before being submitted, the SAB recommends that the Agency consider providing the principal author of each submitted

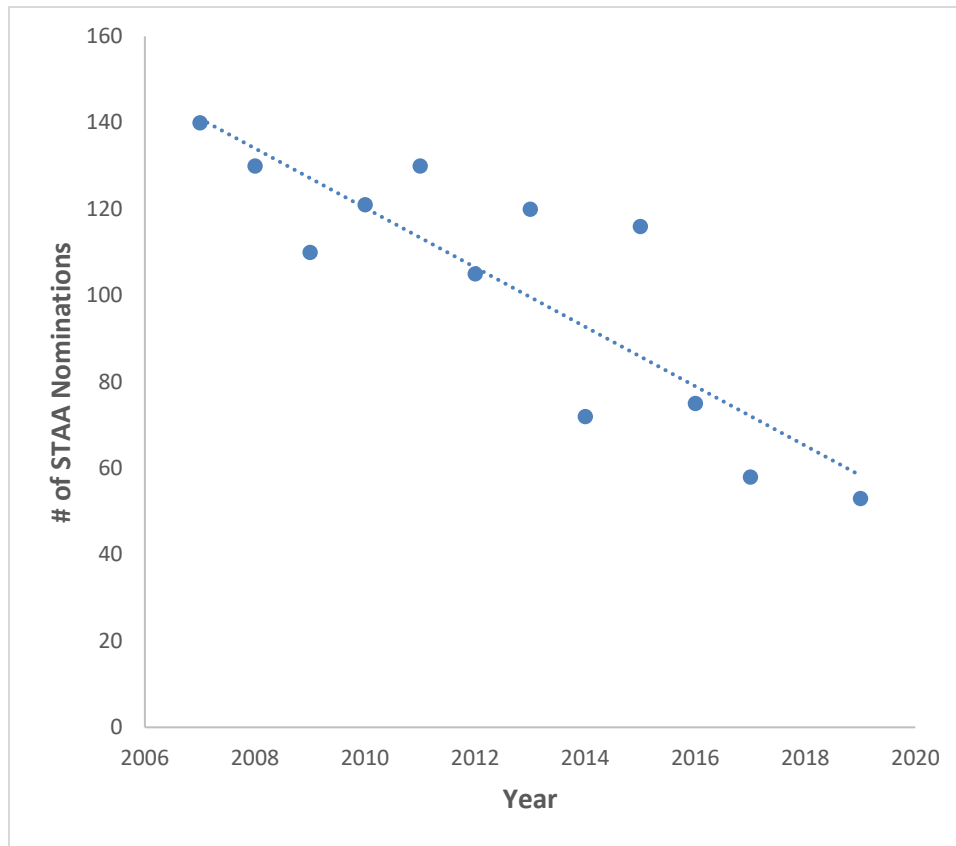
nomination a copy of the PDF/Acrobat® file of each nomination that the Agency downloaded from the electronic nomination system, with a request that the principal author review the file and provide assurance that the PDF/Acrobat® file of their nomination is complete. The Agency would request this review by the principal author after the nomination period ends but before the consolidated PDF file is submitted to the SAB.

- b) *Assure that each nomination provides all information required to be included within a complete nomination package.* With each review cycle, there seem to be fewer occurrences of incomplete nominations and ORD is commended for this attention to detail. That stated, the SAB encourages ORD to thoroughly review each nomination for completeness to even further reduce the burden on the STAA Committee to identify submission gaps and get them resolved in a timely manner.

#### **IV. Other Recommendations:**

- Provide a file of Previous Five Years STAA Nominations: For the 2016-2017 STAA program review, an Excel® file was provided by ORD that listed the nominated authors who have received STAA awards in the previous five years. However, this information was not provided this year. While the DFO has sent out STAA reports from the previous five years to the committee members to check if the authors of the nominations have received STAA awards within that time, it was too time-consuming to check for previous awards for all the authors. The SAB recommends ORD provide a nominated authors list in future STAA award review as was done for the 2016-2017 program.
- Assess the recent trend of decreasing submissions for STAA nominations: The SAB is uncertain why there is a continuing trend of decreasing submissions for STAA nominations over the past several years. Most recently: in 2015, 116 nominations were received with 195 publications contained within these nominations; in 2016, 75 nominations were received with 130 publications contained within these nominations; and in 2017, 58 nominations were received, with 87 publications contained within these nominations. This year (for 2018 and 2019), there are 53 nominations comprised of 98 publications. The total number of nominations have been steadily decreasing. The graph below reflects this trend. The SAB suggests that the Agency assess the reasons for this trend.

In particular, the SAB recommends that the Agency assess whether onerous and time-consuming requirements associated with the submittal of nominations for STAA recognition, and/or other barriers, could be among the reasons for this trend. In addition, to help inform whether the decrease in submissions simply reflects the large authorships of many recent nominations and publications nominated for STAA recognition, the SAB requests that the Agency assess whether the total number of authors has been relatively consistent in recent years. Also, to assist in this assessment, the Agency could survey nominees to gather information on actions that could be taken to encourage future nomination submissions.



**Figure 1. Decreasing Trend of STAA Nominations**

## **REFERENCES**

U.S. EPA Science Advisory Board. 2002. EPA Science Advisory Board (SAB) Panel Formation Process: Immediate Steps to Improve Policies and Procedures. (EPA-SAB-EC-COM-02-003) EPA Science Advisory Board, Washington, DC.

## APPENDIX A: NOMINATIONS RECOMMENDED FOR 2019 STAA RECOGNITION

Note: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination.

***Key to Acronyms used in the Tables shown below:***

NCCT – ORD National Center for Computational Toxicology  
 NCEA – ORD National Center for Environmental Assessment  
 NCEE – ORD National Center for Environmental Economics  
 NERL – ORD National Exposure Research Laboratory  
 NHEERL – ORD National Health and Environmental Effects Laboratory  
 NRMRL – ORD National Risk Management Research Laboratory  
 OAR –Office of Air and Radiation

Nominations Recommended for a Level I Award -- Total of 1		
Nomination	Citation	Authors and Nominating Organization
<b>19-031</b>	Development and deployment of a high-throughput assay to detect chemical disruptors of thyroid hormone synthesis.	Steve Simmons (35% EPA) Joan Hedge (5% EPA) Michael Hornung (3% EPA) Kevin Crofton (3% EPA SES/ST/TITLE 42) Keith Houck (3% EPA) Richard Judson (3% EPA SES/ST/TITLE 42) Katie Paul Friedman (35% Non EPA) Eric Watt (12% Non EPA) Daniel Rotroff (1% Non EPA)  <b>NCCT</b>

Nominations Recommended for a Level II Award -- Total of 3		
Nomination	Citation	Authors and Nominating Organization
19-008	Nationwide study on the prevalence and potential health effects of contaminants of emerging concern in drinking water	<p> Susan Glassmeyer (9% EPA)  Edward Fulong (3% Non EPA)  Dana Kolpin (3% Non EPA)  Angela Batt (7% EPA)  Robert Benson (4% EPA)  Justin Conley (5% EPA)  Joyce Donohue (1% EPA)  Maura Donohue (3% EPA)  Dawn King (3% EPA)  Mitchell Kostich (5% EPA)  Heath Mash (4% EPA)  Stacy Pfaller (3% EPA)  J. Scott Boone (5% Non-EPA)  Jane Simmons (4% EPA)  Eunice Varughese (3% EPA)  Stephen Vesper (3% EPA)  Eric Villegas (3% EPA)  Nichole Brinkman (3% EPA)  Vickie Wilson (5% EPA)  Scott Keely (3% EPA)  Octavia Conerly (2% Non EPA)  Kathleen Schenck (2% Non-EPA)  Nicola Evans (1% EPA)  Laura Rosenblum (1% Non-EPA)  Micheal Ware (1% EPA)  Megan Vogel (1% Non EPA)  William Sander (1% Non EPA)  Mary Noriega (1% Non EPA)  G Shay Fout (1% EPA)  Robert Flick (1% EPA)  Emily Wheaton (1% Non EPA)  Jennifer Cashdollar (1% EPA)  Tripp Boone (1% EPA)  Craig Vigo (1% EPA)  Thuy Nguyen (1% EPA)  Paul Westerhoff (1% Non-EPA) </p> <p><b>NERL</b></p>

Nominations Recommended for a Level II Award -- Total of 3		
Nomination	Citation	Authors and Nominating Organization
19-015	Development of New Alternative Methods for Assessment of Developmental Neurotoxicity Hazard	Timothy Shafer (25% EPA) William Mundy (10% EPA) Chris Frank (25% EPA) Jasmine Brown (15% Non-EPA) Diana Hall (5% Non EPA) Kathleen Wallace (20% EPA)  <b>NHEERL</b>
19-018	A comprehensive description of the toxicity of major geochemical ion mixtures to Ceriodaphnia dubia	Russell Erickson (12% EPA) David Mount (12% EPA) Terry Highland (12% EPA) J. Russell Hockett (12% EPA) Dale Hoff (8% EPA) Teresa Norberg-King (12% EPA) Correne Jenson (12% EPA) Kira Peterson (12% EPA) Stephanie Wisniewsi (4% EPA) Zachary Polaske (4% EPA)  <b>NHEERL</b>

Nominations Recommended for a Level III Award -- Total of 16		
Nomination	Citation	Authors and Nominating Organization
19-010	Using water isotope ratios to derive lake hydrologic parameters for EPA's national lakes assessment	J Renee Brooks (60% EPA) John Stoddard (5% EPA) John Gibson (7% Non EPA) Marc Weber (8% EPA) S. Jean Birk (10% Non-EPA) Kent Rodecap (10% EPA Retired)  <b>NHEERL</b>
19-011	High-throughput predictions of functional use	Katherine Phillips (50% EPA) John Wambaugh (10% EPA) Chris Grulke (5% EPA) Kathie Dionisio (5% EPA) Kristin Isaacs (30% EPA)  <b>NERL</b>
19-014  bundled with  19-066	Child environmental exposures to water and sand at the beach  &  Water Ingestion by Swimmers	Stephanie Deflorio-Barker (25% EPA) Elizabeth Sams (8% EPA) Benjamin Arnold (12% Non EPA) John Colford (8% EPA) Alfred Dufour (11% EPA ST) Stephen Weisberg (8% Non EPA) Ken Schiff (8% Non EPA) Timothy Wade (20% EPA)  <b>NCEA</b>  Alfred Dufour (30% EPA SES/ST/Title 42) Thomas Behymer (15% EPA) Larry Wymer (25% EPA) Matthew Magnuson (15% EPA) Ricardo Cantu (15% Non EPA)  <b>NERL</b>



Nominations Recommended for a Level III Award -- Total of 16		
Nomination	Citation	Authors and Nominating Organization
19-021	Mercury Methylation in Reservoirs: a detailed study of the mechanisms responsible for increased mercury methylation	Todd Luxton (30% EPA) Chris Eckley (40% EPA) Jennifer Goetz (10% EPA) John McKernan (10% EPA) Joe Goulet (10% EPA)  <b>NRMRL</b>
19-027	Impacts of ethanol policy on corn prices: A review and meta-analysis of recent evidence	Heather Klemick (40% EPA) Ann Wolverton (35% EPA) Nicole Condon-Kaiser (25% Non EPA)  <b>NCEE</b>
19-030	Modeling and Validation of Conventional and Strong Hybrid Electric Vehicles and High Voltage Lithium-ion Battery Packs	Soduk Lee (40% EPA) Jeff Cherry (20% EPA) Joseph McDonald (19% EPA) James Sanchez (10% EPA) Ed Nam (1% EPA) Anthony Neam (10% EPA)  <b>OAR</b>
19-032	An investigation of the effects of urban stream burial on nitrogen uptake and ecosystem metabolism	Jake Beaulieu (10% EPA) Paul Mayer (10% EPA) Sujay Kaushai (10% EPA) Michael Pennino (10% EPA) Clay Arango (5% EPA) David Balz (10% EPA) Ken Fritz (5% EPA) Brian Hill (4% EPA) Colleen Eionen (4% EPA) Jorge Santo-Domingo (4% EPA) Hodon Ryu (4% EPA) Heather Golden (10% EPA) Tim Canfield (4% EPA) Christopher Knightes (10% EPA)  <b>NRMRL</b>

Nominations Recommended for a Level III Award -- Total of 16		
Nomination	Citation	Authors and Nominating Organization
19-038	A chemical and Cheminformatics foundation for ToxCast & Tox21 research programs	<p>Ann Richard (40% EPA)  Christopher Grulke (10% EPA SES/ST/Title 42)  Richard Judson (10% EPA SES/ST/Title 42)  Keith Houck (10% EPA)  John Wambaugh (2% EPA)  Thomas Knudsen (2% EPA SES/ST/Title 42)  Grace Patiewicz (2% EPA SES/ST/Title 42)  Antony Williams (2% EPA SES/ST/Title 42)  Russell Thomas (3% EPA SES/ST/Title 42)  Patra Volarath (2% Non EPA)  Inthirany Thillainadarajah (2% Non EPA)  Chihae Yang (2% Non EPA)  James Rathman (2% Non EPA)  Matthew Martin (2% EPA Retired)  Jayaram Kancheria (2% Non EPA)  Kamel Mansouri (2% Non EPA)  Stephen Little (2% EPA Retired)  Kevin Crofton (3% EPA SES/ST/Title 42)</p> <p><b>NCCT</b></p>
19-044	Advancing High-Throughput Chemical Exposure Models for Consumer and Dietary Pathways	<p>Kristin Isaacs (30% EPA)  Peter Egeghy (4% EPA)  Daniel Vallero (4% EPA)  Chris Grulke (3% Non EPA)  John Wambaugh (4% EPA)  Haluk Ozkaynak (12% EPA SES/ST/Title 42)  Michael-Rock Goldsmith (5% EPA Retired)  Katherine Phillips (3% EPA)  Derya Biryol (20% Non EPA)  Luther Smith (2% Non EPA)</p>

Nominations Recommended for a Level III Award -- Total of 16		
Nomination	Citation	Authors and Nominating Organization
		Raina Brooks (2% Non EPA) Chantel Nicolas (3% Non EPA) Graham Glen (8% Non EPA)  <b>NERL</b>
19-045	Validation of In Vivo-In Vitro Arsenic Bioavailability Methods for Human Health Risk Assessments at Contaminated Sites	Kirk Scheckel (6% EPA) Karen Bradham (13% EPA) David Thomas (13% EPA) Clay Nelson (13% Separated EPA) Michele Burgess (6% EPA) Sophia Serda (6% EPA) Gary Diamond (13% Non EPA) Albert Juhasz (12% Non EPA) Julie Klotzbach (6% Non EPA) Marc Stifelman (6% EPA) Mark Maddaloni (6% Non EPA)  <b>NRMRL</b>
19-049	For Development and Application of a Natural Hazards Resilience Screening Index to Enhance Community Resilience	J. Kevin Summers (25% EPA) Lisa Smith (25% EPA) Linda Harwell (25% EPA) Kyle Buck (25% EPA)  <b>NHEERL</b>
19-050	New mechanistic paradigm for pulmonary and systemic health effects of oxidant and irritant pollutants	Urmilla Kodavanti (19% EPA) Andres Henriques (25% Non EPA) Samantha Snow (25% EPA) Mette Schladweiler (7% EPA) Colette Miller (5% EPA) Janice Dye (6% EPA) Allen Ledbetter (3% EPA Retired) Judy Richards (2% EPA) Marie McGee (2% Non EPA) Wanda Williams (2% EPA) Kevin Mauge-Lewis (2% Non EPA) Daniel Costa (2% EPA Retired)  <b>NHEERL</b>

Nominations Recommended for a Level III Award -- Total of 16		
Nomination	Citation	Authors and Nominating Organization
19-052	Development of a system for assessing the health impact of wildfire smoke	Ian Gilmour (20% EPA) Yong Ho Kim (19% Non EPA) Sarah Warren (5% EPA) David Demarini (20% EPA) William Preston (5% Non EPA) Quentin Todd Krantz (5% EPA) Mark Higuchi (5% EPA) Matthew Landis (5% EPA) Barbara George (5% EPA) Mike Hays (5% EPA) Charly King (5% EPA) Rick Jaskot (1% EPA Retired)  <b>NHEERL</b>
19-055	On-the-ground implementation of early detection monitoring	Anett Trebitz (25% EPA) Joel Hoffman (25% EPA) Gregory Peterson (15% EPA) Erik Pilgrim (5% EPA) John (Jack) Kelly (2% EPA) Tyler Billehus (10% Non EPA) George Grant (10% Non EPA) Michelle Gutsch (3% Non EPA) Henry Quinlan (2% Non EPA) Joshua Schloesser (3% Non EPA)  <b>NHEERL</b>
19-057	Conversion of spent carbon dioxide into value added products	Mallikarjuna Nadagouda (30% EPA) Rajender Varma (30% EPA) Sanny Verma (20% Non EPA) Nasir Baig (20% Non EPA)  <b>NRMRL</b>
19-058	A sustainable approach to empower the bio-based future:upgrading biomass to value added products	Mallikarjuna Nadagouda (37% EPA) Rajender Varma (30% EPA) Sanny Verma (20% Non EPA) Nasir Baig (10% Non EPA) Christopher Len (3% Non EPA)  <b>NRMRL</b>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
19-009	<p>(1) Characterization of emissions and residues from simulations of the Deepwater Horizon surface oil burns. Published in Marine Pollution Bulletin</p> <p>(2) Mutagenecity and Oxidative Damage Induced by an Organic Extract of the Particulate Emissions from a Simulation of the Deepwater Horizon Surface Oil Burns. Published in Environmental and Molecular Mutagenicity,</p>	<p>Brian Gullett (5% EPA)  Johanna Aurell (8% EPA)  Amara Holder (10% EPA)  Dale Greenwell (3% EPA)  William Mitchell (3% EPA)  Michael Hays (3% EPA)  Robyn Conmy (10% EPA)  Dennis Tabor (3% EPA)  William Preston (3% EPA)  Ingrid George (3% EPA)  Joseph Abrahamson (3% EPA)  Randy Vander Wal (3% EPA)  Edith Holder (3% EPA)  William Linak (3% EPA)  David DeMarini (10% EPA)  Sarah Warren (10% EPA)  Katelyn Lavrich (3% EPA)  Alexis Flen (3% EPA)  Judith Schmid (3% EPA)  James Samet (8% EPA)</p> <p><b>NRMRL</b></p>
19-012	<p>Search for hidden costs: A Technology-based approach to the energy efficiency gap in light-duty vehicles. Published in Energy Policy.</p>	<p>Gloria Helfand (40% EPA)  Michael McWilliams (20% Non EPA)  Kevin Bolon (20% EPA)  Mandy Sha (5% Non EPA)  Amanda Smith (5% Non EPA)  Lawrence Reichle (5% Non EPA)</p> <p><b>OAR</b></p>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
19-013	<p>(1) A Pilot Study of Fuel Impacts on PM Emissions from Light-Duty Gasoline Vehicles. Published in SAE International Journal of Fuels and Lubricants.</p> <p>(2) Influence of Fuel MP Index and Ethanol on Particulate Emissions from Light-Duty Gasoline Vehicles. Published in SAE World Congress Technical Paper</p>	<p>Aron Butler (35% EPA)  Rafal Sobotowski (40% EPA)  Zuimdie Guerra (10% EPA)  George Hoffman (10% EPA Retired)  Paul Machiele (5% EPA)</p> <p><b>OAR</b></p>
19-020	<p>(1) Modeling the current and future roles of particulate organic nitrates in the southeastern United States. Published in Environmental Science &amp; Technology.</p> <p>(2) On the implications of aerosol liquid water and phase separation for organic aerosol mass. Published in Atmospheric Chemistry and Physics.</p> <p>(3) Simulating aqueous phase isoprene-epoxydiol (IEPOX) secondary organic aerosol production during the 2013 southern oxidant and aerosol study (SOAS)</p>	<p>Havala O. T. Pye (26% EPA)  Sri Hapsari Budisulistiorini (10% Non EPA)  K. Wyatt Appel (7% EPA)  Kirk Baker (1% EPA)  Jesse Bash (7% EPA)  William Hutzell (7% EPA)  Deborah Luecken (7% EPA)  Christopher Boyd (1% Non EPA)  Benjamin Murphy (7% EPA)  Donna Schwede (7% EPA)  Ben Ayres (1% Non EPA)  Karsten Baumann (1% Non EPA)  Annmarie Carlton (1% Non EPA)  William Carter (1% Non EPA)  Eric Edgerton (1% Non EPA)  Juliane Fry (1% Non EPA)  Allen Goldstein (1% Non EPA)  Hongyu Guo (1% Non EPA)  Jose Jimenez (1% Non EPA)  Pawel Misztal (1% Non EPA)  Weiwei Hu (1% Non EPA)  Gabriel Isaacman-VanWertz (1% Non EPA)  V. Faye McNeill (1% Non EPA)  Jason Surratt (1% Non EPA)  Athanasios Nenes (Non EPA 1%)  Nga L. Ng (1% Non EPA)  Paul Shepson (1% Non EPA)  Petros Vasilakos (1% Non EPA)</p>

<b>Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24</b>		
<b>Nomination</b>	<b>Titles of Submitted Papers</b>	<b>Authors and Nominating Organization</b>
		Rodney Weber (1% Non EPA) Lu Xu (1% Non EPA)  <b>NERL</b>
<b>19-024</b>	(1) Connecting the Dots: Linking Environmental Justice Indicators to Daily Dose Model Estimates. Published in International Journal of Environmental Research and Public Health.  (2) Associations between socio-demographic characteristics and chemical concentrations contributing to cumulative exposures in the United States. Published in Journal of Exposure Science and Environmental Epidemiology.	Timothy Barzyk (40% EPA) Rogelio Tornero-Velez (40% EPA) Hongtai Huang (20% Non EPA)  <b>NERL</b>
<b>19-025</b>	(1) Evolution of the United States Energy System and Related Emissions under varying Social and Technological Development Paradigms: Plausible Scenarios for Use in Robust Decision Making. Published in Environmental Science & Technology.  (2) Role of future scenarios in understanding deep uncertainty in long-term air quality management. Published in Journal of Air & Waste Management Association.	Kristen Brown (20% EPA) Julia Gamas (20% EPA) Rebecca Dodde4r (15% EPA) Dan Loughlin (15% EPA) Troy Hottle (5% Non EPA) Samaneh Babaee (5% Non EPA) Rubenka Bandyopadhyay (5% Non EPA) Ozge Kaplan (5% EPA) Carol Lenox (5% EPA) Cynthia Gage (5% Non EPA)  <b>NRMRL</b>
<b>19-026</b>	Impacts of mountaintop removal and valley fill coal mining on C and N processing in terrestrial soil. Published in Water, Air, and Soil Pollution.	Roger Burke (25% EPA) Ken Fritz (15% EPA) Chris Barton (20% Non EPA) Dean Hardy (10% Non EPA) Jeff Jack (5% Non EPA) Stephanie Fulton (10% EPA) Brent Johnson (10% EPA)  <b>NERL</b>

<b>Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24</b>		
<b>Nomination</b>	<b>Titles of Submitted Papers</b>	<b>Authors and Nominating Organization</b>
<b>19-028</b>	<p>(1) Heavy-duty trucking and the energy efficiency paradox: evidence from focus groups and interviews. Published in Transportation Research Part A: Policy and Practice.</p> <p>(2) Potential barriers to improving energy efficiency in commercial buildings: The case of supermarket. Published in Journal of Benefit-Cost Analysis.</p>	<p>Heather Klemick (30% EPA) Ann Wolverton (30% EPA) Elizabeth Kopits (30% EPA) Keith Sargent (10% EPA)</p> <p><b>NCEE</b></p>
<b>19-029</b>	<p>(1) Dynamic evaluation of CMAQ part I: Separating the effects of changing emissions and changing meteorology on ozone levels between 2002 and 2005 in the eastern US. Published in Atmospheric Environment.</p> <p>(2) Dynamic Evaluation of CMAQ part II: Evaluation of Relative Response Factor Metrics for Ozone Attainment demonstrations. Published in Atmospheric Environment.</p>	<p>Kristen Foley (30% EPA) Patrick Dolwick (12% EPA) Christian Hogrefe (12% EPA) Heather Simon (12% EPA) Brian Timin (12% EPA) Norm Posseil (12% EPA) George Pouliot (5% EPA) Shawn Roselle (5% EPA)</p> <p><b>NERL</b></p>
<b>19-033</b>	Roadside vegetation design characteristics that can improve local, near-road air quality. Published in Transportation Research Part D: Transport and Environment.	<p>Richard Baldauf (100% EPA)</p> <p><b>NRMRL</b></p>
<b>19-034</b>	<p>(1) Ozone Trends Across the United States over a Period of Decreasing NOx and VOC Emissions. Published in Environmental Science &amp; Technology.</p> <p>(2) Assessing Temporal and Spatial Patterns of Observed and Predicted Ozone in Multiple Urban Areas. Published in Environmental Health Perspectives.</p>	<p>Heather Simon (31% EPA) Benjamin Wells (25% EPA) Kirk Baker (10% EPA) Adam Reff (18% EPA) Bryan Hubbell (10% EPA) Neil Frank (3% EPA) Jia Xing (3% Non EPA)</p> <p><b>OAR</b></p>



<b>Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24</b>		
<b>Nomination</b>	<b>Titles of Submitted Papers</b>	<b>Authors and Nominating Organization</b>
<b>19-035</b>	<p>(1) Inhibition of biofilm growth on polymer-MWCNTs composites and metal surfaces. Published in Science of Total Environment.</p> <p>(2) Experimental and modeling studies of sorption of ceria nanoparticles on microbial biofilms. Published in Bioresources Technology.</p>	<p>Endalkachew Sahle-Demessie (50% EPA)  Hengye Jing (30% Non EPA)  George Sorial (7% Non EPA)  Christina Bennett-Stampe (5% EPA)  Ashraf Aly Hassan (5% Non EPA)  Bineyam Mezgebe (3% Non EPA)</p> <p><b>NRMRL</b></p>
<b>19-036</b>	<p>(1) Degradation Studies of Multiwall Carbon Nanotube Reinforced Polypropylene During Environmental Aging. Published in Carbon.</p> <p>(2) Evaluating weathering of food packaging polyethylene-nano- clay composites: Release of nanoparticles and their impacts. Published in Nanoimpact.</p> <p>(3) Effects of source and seasonal variations of natural organic matters on the fate and transport of CeO<sub>2</sub> nanoparticles in the environment. Published in Science of the Total Environment.</p>	<p>Endalkachew Sahle-Demessie (40% EPA)  Amy Zhao (5% EPA)  Teri Richardson (5% EPA)  Jonathan Pressman (5% EPA)  Eunice Varughese (5% EPA)  George Sorial (5% Non EPA)  Zhen LI (15% Non EPA)  Changseok Han (15% Non EPA)  Jun Wang (5% Non EPA)</p> <p><b>NRMRL</b></p>
<b>19-041</b>	<p>(1) Uterine Artery Flow and Offspring Growth in Long-Evans Rats following Maternal Exposure to Ozone during Implantation. Published in Environmental Health Perspectives.</p> <p>(2) Aspirin Pre-Treatment Modulates Ozone-Induced Fetal Growth Restriction and Alterations in Uterine blood flow in rats. Published in Reproductive Toxicology.</p>	<p>Colette Miller (40% EPA)  Mette Schladweiler (5% EPA)  Aimken Farraj (5% EPA)  Janie Dye (13% EPA)  Urmila Kodavanti (13% EPA)  Allen Ledbetter (5% EPA Retired)  Samantha Snow (3% EPA)  Charles Wood (3% EPA Retired)  Judy Richards (3% EPA)  Leslie Thompson (3% EPA Retired)  Andres Henriquez (1% Non EPA)  Erica Stewart (1% Non EPA)  Mendi Hazari (5% EPA)</p> <p><b>NHEERL</b></p>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
19-046	<p>(1) Vegetation land cover near residence is associated with reduced allostatic load and improved biomarkers of neuroendocrine, metabolic and immune functions. Published in Environmental Research.</p> <p>(2) Environmental risk factors for T. gondii infections and the impact of infections on allostatic load in residents of Central North Carolina. Published in BMC Infection Diseases.</p>	<p>Andrey Egorov (17% EPA)  Shannon Griffin (15% EPA)  Timothy Wade (15% EPA)  Reagan Converse (15% Non EPA)  Elizabeth Sams (10% EPA)  Edward Hudgens (10% EPA)  Laura Jackson (5% EPA)  Jennifer Styles (5% Non EPA)  Elizabeth Klein (5% Non EPA)  Anthony Wilson (3% Non EPA)</p> <p><b>NHEERL</b></p>
19-047	<p>(1) Comparison of modeling approaches to prioritize chemicals based on estimates of exposure an exposure potential. Published in Science of the Total Environment.</p> <p>(2) A decision analytic approach to exposure-based chemical prioritization. Published in PLOS ONE</p> <p>(3) Advances on a Decision Analytic Approach to Exposure-Based Chemical Prioritization. Published in Risk Analysis.</p>	<p>Daniel Vallero (27% EPA)  Perter Paul Egeghy (17% EPA)  Elaine Cohen Hubal (14% EPA)  Jade Mitchell (15% EPA Retired)  John Wambaugh (3% EPA)  Antony Williams (2% EPA)  Matthew Wood (5% Non EPA)  Igor Linkov (3% Non EPA)  Jon Arnot (4% Non EPA)  Sastry Isukiapalli (1% Non EPA)  Oliver Jolliet (2% Non EPA)  Panos Georgopoulos (1% Non EPA)  Surajit Dasgupta (1% Non EPA)  Muhilan Pandian (1% Non EPA)  Nicolas Pabon (1% Non EPA)  Zachary Collier (1% Non EPA)  Kenton Piourde (1% Non EPA)  Sabrina Larkin (1% Non EPA)</p> <p><b>NERL</b></p>
19-048	Key ecological responses to nitrogen are altered by climate change. Published in Nature Climate Change.	<p>Tara Greaver (24% EPA)  Jana Compton (15% EPA)  Chris Clark (15% EPA)  Jill Baron (3% Non EPA)  Dena Vallano (10% EPA)  Alan Talheim (5% Non EPA)  Chris Weaver (5% EPA)</p>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
		Larry Band (3% Non EPA) Eric Davidson (3% Non EPA) Lingli Liu (2% Non EPA) Jason Lynch (3% EPA) Christine Goodale (2% Non EPA) Rick Haeuber (1% EPA) Emmi Felker-Quinn (3% Non EPA) Christina Tague (3% Non EPA) Kris Novak (1% Non EPA) Jeff Herrick (2% EPA)  <b>NCEA</b>
<b>19-051</b>	Sunlight-Driven Reduction of Silver Ions by Natural Organic Matter. Published in Environmental Science & Technology.	Richard Zepp (35% EPA SES/ST/Title 42) Brittany Stuart (20% EPA) Roberta Howes (10% EPA Retired) Wen-che Hou (35% Non EPA)  <b>NERL</b>
<b>19-053</b>	(1) Development of a conceptual framework depicting a child's total (built, natural, social) environment. Published in Journal of Environmental and Health Sciences.  (2) Contributions of a child's built, natural, and social environments to their general Cognitive Ability. Published in PLOS ONE.  (3) Chemical and non-chemical stressors affecting childhood obesity: a systematic scoping review. Published in Journal of Exposure Science and Environmental Epidemiology.	Nicolle Tulve (40% EPA) Jazmin Ruiz (20% Non EPA) Kim Lichtveld (20% Non EPA) Sally Darney (5% EPA) Jim Quackenboss (10% EPA) Kent Thomas (5% EPA)  <b>NERL</b>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
19-054	<p>(1) Application of the Human Well-Being Index to Sensitive Population Divisions: a Children's Well-Being. Published in Child Indicators Research.</p> <p>(2) Evaluating the Transferability of a U.S. Human Well-Being Index (HWBI) Framework to Native Americans. Published in Social Indicators Research.</p> <p>(3) A model for change: An approach for forecasting well-being from service-based decisions. Published in Ecological Indicators</p>	<p>Nicolle Tulve (40% EPA) Jazmin Ruiz (20% Non EPA) Kim Lichtveld (20% Non EPA) Sally Darney (5% EPA) Jim Quackenboss (10% EPA) Kent Thomas (5% EPA)</p> <p><b>NHEERL</b></p>
19-056	<p>Thoracic and respirable particle definitions for human health risk assessment. Published in Particle and Fibre Toxicology.</p>	<p>James Brown (85% EPA) Terry Gordon (5% Non EPA) Owen Price (5% Non EPA) Bahman Asgharian (5% Non EPA)</p> <p><b>NCEA</b></p>
19-059	<p>(1) Oxidative C-H activation of amines using protuberant lychee-like goethite. Published in Nature Climate Change.</p> <p>(2) Photocatalytic C-H activation and oxidative esterification using Pd@g-C<sub>3</sub>N<sub>4</sub>. Published in Catalysis Today.</p> <p>(3) Hydroxylation of benzene via C-H activation using bimetallic CuAg@g-C<sub>3</sub>N<sub>4</sub>. Published in ACS Sustainable Chemistry and Engineering.</p>	<p>Mallikarjuna Nadagouda (30% EPA) Rajender Varma (30% EPA) Sanny Verma (20% Non EPA) Nasir Baig (20% Non EPA)</p> <p><b>NRMRL</b></p>
19-063	<p>Increasing the credibility of regional climate simulations by introducing subgrid-scale cloud-radiation interactions. Published in Journal of Geophysical Research Atmospheres.</p>	<p>Jerold Herwehe (40% EPA) Kiran Alapaty (30% EPA) Tanya Spero (20% EPA) Christopher Nolte (10% EPA)</p> <p><b>NERL</b></p>

Nominations Recommended for Honorable Mention (No Monetary Award) -- Total of 24		
Nomination	Titles of Submitted Papers	Authors and Nominating Organization
19-065	Bayesian framework for water quality model uncertainty estimation and risk management. Published in ASCE Journal of Hydrologic Engineering.	Mohamed Hantush (70% EPA) Abhishek Chaudhary (30% Non EPA)  NRMRL